

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YECHEZKEL BARENHOLZ,
AND HILARY SHMEEDA

Appeal No. 1997-0661
Application No. 08/257,866

ON BRIEF

Before, WINTERS, WILLIAM F. SMITH, and ADAMS, Administrative Patent Judges.

ADAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-5, which are all the claims pending in the application.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. A method for treating hypertension in a subject having elevated blood pressure, comprising:
 intravenously administering to the subject a suspension of small unilamellar liposomes composed primarily of phosphatidylcholine phospholipids having phase transition temperatures in the range between about -10 and 37°C, and
 repeating said administering over a period of at least several days and in an amount effective to produce a reduction in both systolic and diastolic blood pressure of at least 10 percent from said elevated blood pressure.

The references relied upon by the examiner are:

Barenholz et al. (Barenholz) 4,812,314 Mar. 14, 1989

Soloviev et al. (Soloviev) ¹, "Phospholipid vesicles (liposomes) restore endothelium-dependent cholinergic relaxation in thoracic aorta from spontaneously hypertensive rats," J. Hypertension, Vol. 11(6), pp.623-627 (1993)

GROUND OF REJECTION

Claims 1-5² are rejected under 35 U.S.C. § 103 as obvious over Soloviev in view of Barenholz.

We reverse.

¹ We note that the examiner makes reference (Answer, page 3) to the entire Soloviev reference. However, upon review of the administrative file we note the Notice of References Cited, FORM PTO-892, attached to Paper No. 5. The Notice of References Cited refers to "CA 119:173862m Soloviev et al., 1993." Indeed the only Soloviev reference in the administrative file is the Chemical Abstract. We have however, obtained a copy of the entire Soloviev reference and will base our decision on Soloviev as read in its entirety.

² We note appellants canceled claim 6 in the amendment filed under 37 CFR § 1.116 (Paper No. 11, received October 5, 1995).

DISCUSSION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, and to the respective positions articulated by the appellants and the examiner. We make reference to the examiner's Answer³ for the examiner's reasoning in support of the rejection. We further reference appellants' Brief⁴, and appellants' Reply Brief⁵ for the appellants' arguments in favor of patentability.

THE REJECTION UNDER 35 U.S.C. § 103:

The initial burden of presenting a prima facie case of obviousness rests on the examiner. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

The examiner states (Answer, bridging paragraph, pages 3-4) that "Soloviev disclose that liposomes made of egg phosphatidylcholine had a relaxing effect on the thoracic aortas of spontaneously hypertensive rats." The examiner therefore concludes that:

To administer the liposomes for the treatment of hypertension would have been obvious from the disclosure of Soloviev et al. as the liposomes had a relaxing effect on the aortic smooth muscle. Thus by relaxing blood vessels the pressure in the blood vessel would go down as the diameter of the vessel increased. Thus a substance known to relax blood vessels would logically be presumed to be useful in the treatment of hypertension.

³ Paper No. 16, mailed April 24, 1996.

⁴ Paper No. 15, received March 6, 1996.

⁵ Paper No. 17, received June 27, 1996.

The examiner relies upon Barenholz to teach liposomes of between 0.02 and 0.08 microns in size.

Appellants argue (Brief, page 5) that the “Soloviev reference would not give one of ordinary skill in the art a reasonable expectation of success for treating hypertension by the intravenous administration of liposomes.” Reading Soloviev in its entirety, W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1550, 220 USPQ 303, 311 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984), Soloviev teach (page 624, column 1) precontracting thoracic aortic rings to plateau level in vitro with noradrenaline, and then administering acetylcholine to relax the noradrenaline-precontracted ring. Soloviev found (page 625, figure 2) that administering liposomes can further relax the acetylcholine relaxed noradrenaline-precontracted ring. However, Soloviev also teach (page 625, column 1) that “liposomes administered at plateau level of noradrenaline-induced contraction caused increased tension development in both [Wistar-Kyoto and spontaneously hypertensive] strains of rats but never relaxation.”

Appellants note (Reply Brief, page 2) that “[c]laim 1 on appeal requires a decrease of systolic and diastolic blood pressure of at least 10 percent in the subject, whereas Soloviev did not measure blood pressure change as a result of treatment.” Here, we agree with appellants, Soloviev does not provide a reasonable expectation of success in obtaining a “reduction in both systolic and diastolic blood pressure of at least 10 percent from said elevated blood pressure” by administering a suspension of small unilamellar liposomes intravenously, as

required in claim 1. In re O'Farrell, 858 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988) (obviousness also requires a "reasonable expectation of success").

As recognized by appellants (Brief, page 6) "[t]he deficiencies of Soloviev are not made up for by the teachings of Barenholz." Barenholz is directed to (Abstract) "[a] method of treating a relatively aged animal to reverse age-related changes in the lipid composition of organ and tissue cells, such as heart muscle cells." We agree with appellants (Brief, page 6) that "Barenholz provides no basis for predicting that intravenously administered liposomes would be effective in lowering arterial pressure in a subject suffering from hypertension."

In our opinion, the examiner failed to meet her burden of establishing a prima facie case of obviousness. In re Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444 (Fed. Cir. 1992). Having determined that the examiner has not established a prima facie case of obviousness, we find it unnecessary to discuss the Guyton⁶ and Gabazon et al.⁷ references relied on by appellants (Brief, page 7) to rebut any such prima facie case.

⁶ Textbook of Medical Physiology, 269 (7th ed. 1986).

⁷ "Liposomes as *In Vivo* Carriers of Adriamycin: Reduced Cardiac Uptake and Preserved Antitumor Activity in Mice," Cancer Research, Vol. 42, pp. 4734-4739 (1982).

Where the examiner fails to establish a prima facie case, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Accordingly, we reverse the rejection of claims 1-5 under 35 U.S.C. § 103 over Soloviev in view of Barenholz.

REVERSED

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Sherman D. Winters)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
William F. Smith)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
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Donald E. Adams)	
Administrative Patent Judge)	

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